



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
OUTREACH AND ASSISTANCE CENTER  
Environmental Assistance Office  
12/2002

## MISSOURI MUNICIPAL WATER POLLUTION PREVENTION SURVEY

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### ***What is the Missouri Water Pollution Prevention Survey?***

The Missouri Municipal Water Pollution Prevention Survey (MWPP) is an annual self-evaluation of your sewer utility. The MWPP is a tool for management and operations personnel to jointly evaluate the wastewater utility system. The survey will help identify system strengths and weaknesses. You can use this information to plan system improvements or upgrades, and operational or financial changes. These improvements will help you maintain compliance with your National Pollutant Discharge Elimination System (NPDES) discharge permit.

The survey is divided into five sections:

The **Wastewater Utility Systems** section identifies the various components of your utility system and addresses operation and maintenance issues.

The **Loading / Capacity** section examines the hydraulic and organic loads on the system, compares the loading to design capacity, and looks at the treatment efficiency of the system.

The **Sludge and Biosolids-Disposal and Reuse** section identifies the sludge management systems and evaluates adherence to “503” sludge regulations.

The **Sewer Use** section evaluates the sewer use ordinance and the effects of local commercial and industrial facilities on the wastewater treatment system.

The **Management and Financial Capacity** section examines the ability of the management and financial systems to provide for the long-term viability of the utility.

The MWPP Survey is available in three forms:

- You can obtain a paper form from the Department's Environmental Assistance Office.
- You can access the MWPP Survey in pdf format at our web site and print it on paper yourself (<http://www.dnr.state.mo.us/oac/pubs.htm>), Water Pollution Control, MO 780-1559).
- You can download the Microsoft Word template from our web site and complete the survey electronically (<http://www.dnr.state.mo.us/oac/emiapps.htm>) download the EMI Software.)

To complete the MWPP Survey electronically, follow these steps:

- Download the files (files will be placed on your C: drive in a subdirectory called EMI).
- Open the file MWPPTemp (template version) in Word.
- Save the form under a new name (this way you will have the original blank template if needed).
- Enter information in highlighted blanks. Mark check boxes by clicking on them. Calculations are performed automatically as the required figures are input.
- To move from field to field, use the arrow keys or the tab key.
- To move to a particular page, use the right scroll bar or the mouse scroll wheel.

The form is a template. If you wish to modify the form to fit special needs of your system, refer to the instructions for customization at the end of the survey.

### ***What resources will I need to complete the survey?***

- NPDES permit
- Discharge monitoring reports
- Operations and maintenance manual
- Utility financial reports
- Internet connection to download the pdf form or Word template \*
- MS Word to fill in the template form electronically \*

\* not required for manual completion of form

### ***What do I do if our system has more than one treatment facility?***

The MWPP Survey form covers one treatment facility. If you have additional wastewater treatment facilities, fill out the form “Additional Facilities- MWPP Survey ” for each one. If you are filling out your form electronically, open the file MWPPAdd, located on the C: drive in the EMI subdirectory.

### ***Do I have to participate in the MWPP Survey Program?***

**No! Participation in the MWPP survey is voluntary.** We developed the MWPP Survey as a tool for you to use to assess the technical, managerial, and financial capacity of your wastewater systems. It will give you a snapshot of your system’s health and that is reason enough to use the tool.

However, Missouri State Regulation 10 CSR 20-9 (7) gives you some incentive to complete and return the form. If you should run into compliance problems and you have participated in the survey for previous five consecutive years, the regulation provides for additional “conference and conciliation” communications and penalty reductions. In essence, completing the form regularly is a demonstration of your intent to manage your wastewater systems properly and we want to recognize you for that.

If you would like credit for participating in the program, mail a copy of your completed survey to:

Department of Natural Resources  
Environmental Assistance Office  
P.O. Box 176  
Jefferson City, MO 65102-0176

If you completed the survey in Word, print a copy of the completed form and mail it in. Better yet, e-mail an electronic copy as a Word document attachment to us at [oac@mail.dnr.state.mo.us](mailto:oac@mail.dnr.state.mo.us).

***What if I have questions about the survey?***

Call the Environmental Assistance Office at 1-800-361-4827 or (573) 526-6627 or e-mail us. We will be glad to help you assess and build your system's capacity.

***Thank You for Participating***

***In the MWPP Survey!***



# MISSOURI MUNICIPAL WATER POLLUTION PREVENTION SURVEY

## SYSTEM IDENTIFICATION

Today's Date: 12/13/02

City, District or Company Name	Evaluation Period (month/year to month/year)
	To
Mailing Address	Phone Number
	( )
Contact Person	Title
Mailing Address (if different)	Phone Number (if different)
	( )
1 <sup>st</sup> Wastewater Treatment Facility Name	Permit Number
	MO-
2 <sup>nd</sup> Wastewater Treatment Facility Name	Permit Number
	MO-
3 <sup>rd</sup> Wastewater Treatment Facility Name	Permit Number
	MO-
4 <sup>th</sup> Wastewater Treatment Facility Name	Permit Number
	MO-

# WASTEWATER UTILITY SYSTEMS

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## **I. WASTEWATER TREATMENT PROCESSES**

Check the boxes of the wastewater treatment processes that make up your wastewater treatment system:

### **Preliminary Treatment Systems:**

☐ Bar Screen      ☐ Grit Channel      ☐ Comminutor      ☐ Other

### **Primary Treatment Systems:**

☐ Primary Clarifier      ☐ Other

### **Secondary Treatment Systems:**

#### **Lagoon:**

☐ Number of Cells       ☐ Mechanical Aeration

#### **Fixed Film:**

☐ Trickling Filter      ☐ Rotating Biological Contact      ☐ Sand Filter

#### **Activated Sludge:**

☐ Package Plant      ☐ Contact Stabilization      ☐ Oxidation Ditch

☐ Sequential Batch Reactor      ☐ Extended Aeration      ☐ Other

### **Advanced or Tertiary Treatment Systems:**

☐ Description

### **Disinfection Systems:**

☐ Chlorine      ☐ Ultraviolet      ☐ Ozone      ☐ Other

### **Effluent - Stream Discharge:**

☐ Continuous Discharge      ☐ Controlled Discharge      ☐ No-discharge

### **Effluent - Land Application:**

☐ Overland Flow      ☐ Irrigation System      ☐ Wetlands

## **II. SLUDGE TREATMENT SYSTEMS**

Check the boxes of the components that make up your sludge treatment system.

### **Sludge treatment:**

- ☐ Wastewater Lagoon      ☐ Anaerobic Digester      ☐ Aerobic Digester  
☐ Lime Stabilization      ☐ Composting      ☐ Air or Heat Drying  
☐ Storage Tank      ☐ Other

### **Sludge Storage Facilities:**

- ☐ Holding Tank      ☐ Basin      ☐ Concrete Pad      ☐ Building  
☐ Other

## **III. WASTEWATER SYSTEM DESIGN LIFE/CONDITION**

The original construction was completed in .

Upgrades/expansions to the system were completed in .

The stated design life of the system is  years.

We believe the remaining useful life of our system is  years.

- ☐ We anticipate that upgrades to the system will be needed to meet new federal or state discharge limitations.

The general condition of our wastewater treatment system is:

- ☐ Excellent      ☐ Good      ☐ Fair      ☐ Poor

### **Treatment Systems Operations Checklist:**

- ☐ The operation and maintenance manual is available on site.
- ☐ We have adequate laboratory equipment for process control.
- ☐ We have adequate laboratory equipment for regulatory testing or we contract for this service.
- ☐ We have a safety program, procedures and equipment in place.
- ☐ We have a preventive/predictive maintenance program in place.

- ☐ We have spare parts and equipment available for emergencies.
- ☐ We keep accurate operations and maintenance records.
- ☐ *Facilities that store large quantities of chlorine, ammonia, anhydrous sulfur dioxide, or methane:*
  - ☐ We have notified the Local Emergency Planning Commission (LEPC) and Missouri Emergency Response Commission (MERC) by filing MERC Tier II forms with each agency.
- ☐ *Facilities that store more than threshold quantities of these chemicals:*
  - ☐ We have a Risk Management Plan in place.

#### **IV. COLLECTION SYSTEM**

We have  miles of collection sewers.

Check the boxes of components that make up your collection system.

- ☐ Gravity Sewers:  % of system.
- ☐ Combined storm and sanitary sewers:  % of system.
- ☐ Pressure Sewers/Grinder Pump:  % of system.
- ☐ Pressure Sewers/Septic Tank Effluent Pumps:  % of system.
- ☐ Small Diameter Gravity Sewers:  % of system.
- ☐ Vacuum Sewers:  % of system.
- ☐ Flat Grade/Simplified Sewers:  % of system.

The oldest part of our collection system is  years old.

The oldest part is  % of our total collection system.

We repaired, replaced or rehabilitated  % of our collection system last year.

We have  lift stations in our system.

In the last year, our collection system bypassed  days during wet weather and  days in dry weather.

Inflow and Infiltration (I&I) in our collection system is:

- ☐ High (causes repeated bypasses or stresses the capacity of the treatment plant)
- ☐ Medium
- ☐ Low (seldom causes the system any difficulties)

**Collection System Operations Checklist:**

- ☐ We maintain accurate maps of the collection system and they are readily available to our maintenance staff.
- ☐ We perform routine inspection and maintenance of our system.
- ☐ We keep accurate, detailed maintenance records.
- ☐ We have procedures for handling stoppages and citizen complaints.
- ☐ We have emergency pumping and repair equipment on hand.
- ☐ We require building connection permits and inspection of installations before new connections can be made.

**V. OPERATIONS / STAFFING**

Check the boxes that apply to your system.

- ☐ Our staff handles the operation and maintenance of our wastewater systems.
- ☐ We contract operation and maintenance work to .
- ☐ Our staff does laboratory analysis in our on-site laboratory.
- ☐ We contract our laboratory analysis work to .

Our operating permit states that our wastewater treatment plant is classified at the

☐ A ☐ B ☐ C ☐ D certification level.

**Staffing Checklist:**

- ☐ Our wastewater utility is adequately staffed.
- ☐ Our plant supervisors are all certified at the wastewater plant certification level.
- ☐ Our wastewater operators are all certified at a minimum of level D.

- ☐ Our operators receive at least 30 hours of approved certificate renewal training every three years.
- ☐ We pay our operators for time spent attending training.
- ☐ We pay the renewal training costs for our operators.
- ☐ We pay professional organization membership dues for our wastewater operators.

## LOADING / CAPACITY

If the organic or hydraulic loading of this facility consistently exceeds ninety percent of it's design capacity, you may have trouble meeting discharge limits. This section looks at loading, capacity, effluent quality and the effects of future growth on this facility.

**Table 1**

<b>HYDRAULIC LOADING</b> <b>Flow Measured On:</b> <input type="checkbox"/> Influent <input type="checkbox"/> Effluent <input type="checkbox"/> Flow not measured				<b>ORGANIC LOADING</b> <b>(Influent)</b>	
1	2	3	4	5	6
Month	No. of Bypasses during Month	Highest Peak Reading on Flowmeter (MGD)	Average Daily Flow (MGD)	Average BOD (mg/L)	Average Daily Organic Loading (col.4 x col. 5 x 8.34) = lb./day
Jan	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Feb	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Mar*	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Apr	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
May	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Jun*	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Jul	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Aug	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Sep*	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Oct	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Nov	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Dec*	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0

\* Lagoons – if you only test quarterly, input quarterly #s at Mar, June, Sep, and Dec.

### Definitions:

**Bypass** - any release or discharge from the plant that is untreated or only partially treated.

**Highest Peak Flow** - the highest daylong flow recorded in each month.

**Average Daily Flow** - the average of all daily flows for each month.

**Average Biochemical Oxygen Demand (BOD)** - the average of all influent samples for each month (concentrations, not mass or flow weighted).

## **I. FACILITY DESIGN CAPACITIES**

*(This section uses the information found in Table 1 on the previous page. Design information can be found in your O&M Manual or in the design specifications.)*

The design average hydraulic capacity of our system is [REDACTED] MGD.

Ninety percent of the design hydraulic capacity is 0.00 MGD.

The average daily flow (Table 1 col. 4) exceeded 90 percent of the design hydraulic capacity [REDACTED] times last year.

The peak hydraulic capacity of our system is [REDACTED] MGD.

The highest peak flow (Table 1 col. 3) exceeded the peak hydraulic capacity of our system [REDACTED] times last year.

The design average organic capacity of our system is [REDACTED] BOD lbs./day.

Ninety percent of the design average organic capacity is 0 BOD lbs./day.

The average daily organic loading (Table 1 col. 6) exceeded 90 percent of the design average organic capacity [REDACTED] times last year.

There were [REDACTED] bypasses (Table 1 col. 2) due to storm water last year.

There were [REDACTED] bypasses (column 2) due to equipment failure last year.

[REDACTED] Our treatment facility has significant seasonal fluctuations in loading due to population or water use variations (e.g., students, tourism, institutional populations, industrial water use variations, migrant workers, part-year residents).

Table 2

<i>EFFLUENT QUALITY</i>		
Month	BOD (mg/L) Monthly Average	NFR (TSS) (mg/L) Monthly Average
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
Permit Limits		
No. of Times Over Limit		

Table 3

<i>OTHER PERMITTED CONSTITUENTS</i>					
Constituent		No. of Times Permit Limit was Exceeded	Constituent		No. of Times Permit Limit was Exceeded
	Fecal Coliform			Ammonia	
	Chlorine			pH	
	Metals			Organics	
	Whole Effluent Toxicity			Other	

## **II. GROWTH AND EXPANSION**

Check those boxes that apply to your facility.

The design population equivalent for our system is .

The current population equivalent served by our system is estimated to be .

Over the next 5 years, we anticipate that our community's population will:

- ☐ Grow significantly.
- ☐ Remain about the same.
- ☐ Decline significantly.

Over the next 5 years, we anticipate that our community will:

- ☐ Extend sewer service to previously unsewered areas of the community.
- ☐ See significant new residential development.
- ☐ See significant new commercial development.
- ☐ See a significant decrease in commercial facilities.
- ☐ See significant new industrial development.
- ☐ See a significant decrease in industrial operations.

We believe that these changes will:

- ☐ Not require any operational or physical changes to the treatment facility.
- ☐ Require operational changes at the treatment facility.
- ☐ Require a treatment facility upgrade.
- ☐ Require a treatment facility expansion.

## SLUDGE / BIOSOLIDS - DISPOSAL / REUSE

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Check the boxes which apply to your sludge handling practices:

- ☐ Our sludge is retained in our wastewater treatment lagoon.
- ☐ We are setting aside money in our budget for future sludge removal costs.  
(Skip to the **Sewer Use** - page 13 if no sludge was removed this year)
- ☐ We haul our sludge to another permitted treatment facility.
- ☐ A permitted contract hauler hauls and disposes of our sludge.
- ☐ We haul our sludge to a permitted incineration facility.
- ☐ We haul our dried sludge to a permitted landfill.
- ☐ We dispose of our sludge in a permitted sludge storage lagoon.
- ☐ We land apply our biosolids.

We reused or disposed of approximately  **dry tons** of sludge last year.  
**dry tons** = (# gallons x % total solids) ÷ 24,000

### Sludge/Biosolids Checklist:

- ☐ We have a copy of *Standard Conditions for NPDES Permits Part III - Sludge & Biosolids from Domestic Wastewater Treatment Systems* and a set of *Water Quality Guides* available on-site for reference.
- ☐ We file our Annual Form S Sludge Report with the DNR Regional office (due January 28 each year) and send a copy to EPA Region VII (major facilities only).  
(Note: wastewater lagoons are only required to report when sludge is removed or the lagoon is closed.)
- ☐ We have adequate sludge/biosolids storage capacity for the time periods when we are unable to land apply or transport to a disposal facility.
- ☐ We keep records of the sludge/biosolids removed from our facility. The records include:
  - ☐ Date, percent solids, the number of gallons of sludge disposed and the method of disposal.
  - ☐ Name, address, phone number and permit number of any facility or hauler receiving sludge.
- ☐ We keep our records for at least five years.

## Land Application Systems Checklist:

- ☐ Our biosolids meet "503" ☐ Class A, or ☐ Class B pathogen requirements.
- ☐ Our biosolids meet "503" vector attraction requirements.
- ☐ We document the processes used to meet the pathogen and vector attraction requirements.
- ☐ We test and document the metals content of our biosolids.
- ☐ We test the soil at our land application sites at least once every 5 years. The testing includes pH, Cation Exchange Capacity (CEC), and phosphorus.
- ☐ We have adequate land application sites available to handle our biosolids if one of our application sites becomes unavailable.
- ☐ We follow best management practices when we land apply our biosolids.
- ☐ We follow "good neighbor" practices when we land apply on farmers private lands.
- ☐ Our land application site records include:
  - ☐ Name and address of the landowner.
  - ☐ Location of the site including a legal description.
  - ☐ Crops grown on the site.
  - ☐ Number of dry tons/year of biosolids applied to the site.
  - ☐ Plant Available Nitrogen (PAN) applied in lbs./acre/year if the biosolids application rate exceeds 2 dry tons/acre/year.
  - ☐ Metals applied in lbs./acre/year and the cumulative pollutant loading if the biosolids exceeded the "low metals" criteria.
- ☐ We have adequate equipment for our land application program.

The general condition of our equipment is:

☐ Excellent   ☐ Good   ☐ Fair   ☐ Poor

- ☐ We contract for land application services.

## SEWER USE

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### **I. SEWER USE ORDINANCE**

☐ We have a sewer-use ordinance in place.

Our sewer-use ordinance prohibits the discharge of wastes to the sewer system which:

☐ Could cause a fire.

☐ Could cause an explosion.

☐ Could cause corrosive structural damage.

☐ Could obstruct the flow of sewage through the system.

☐ Have a pH less than 5.

☐ Have a temperature greater than 104°F.

☐ Our sewer-use ordinance prohibits or regulates the introduction of toxic wastes into the sewer system.

☐ Our sewer-use ordinance prohibits or regulates the introduction of excessive amounts of high-strength oxygen-demanding wastes into the sewer system.

### **II. COMMERCIAL AND INDUSTRIAL USE**

☐ We have identified industries or commercial users that discharge more than 25,000 gallons per day of process water or they account for more than 5% of our average daily flow.

☐ We have identified new industries being established in our community.

☐ We have identified existing industries that are planning significant expansions or adding new processes.

☐ We have determined if any of these industries are subject to regulation under Federal pretreatment standards.

☐ We have a procedure in place to evaluate any industrial or commercial discharge to the sewer system that causes operational problems or effluent discharge violations.

### **III. INDUSTRIAL PRETREATMENT PROGRAM**

- ☐ Our community is required to have an Industrial Pretreatment Program.
  - ☐ We have established legal authority for our pretreatment program by adopting an ordinance.
  - ☐ We have established local discharge limits that meet or exceed EPA's requirements.
  - ☐ We have identified the significant industrial users and categorical industries that are subject to the pretreatment regulations.
  - ☐ We have established permitting and record keeping procedures.
  - ☐ We have adequate funding to implement our pretreatment program.

## MANAGEMENT AND FINANCIAL CAPACITY

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### **I. MANAGEMENT**

- ☐ We have an organizational chart that clearly shows the lines of authority.
- ☐ We have written accounting and audit procedures in place.
- ☐ We have bond insurance for employees who handle system funds.
- ☐ We have written billing procedures and a collection policy in place.
- ☐ We have written purchasing and inventory control procedures in place.
- ☐ We have written job descriptions and selection criteria.
- ☐ We have established internal communications (i.e. newsletter, bulletin board, and staff meetings).
- ☐ We have a procedure in place for handling customer complaints.
- ☐ We have a public relations program (includes newsletters, news releases, bill fliers, open house, etc.).
- ☐ We have an emergency plan in place.

### **II. FINANCIAL**

- ☐ Our wastewater utility (or department) is set up as an enterprise fund (budgeted separately from other municipal activities such as water supply, streets, and parks).
- ☐ We have a separate reserve account for planned repair and replacement of equipment.
- ☐ We have money budgeted for emergency operation and repair. (A good rule of thumb is to keep enough funds on hand so you can replace your most vulnerable piece of equipment, and be able to pay for 45 days of operation and maintenance.)
- ☐ We receive a monthly report of revenues and expenses.
  - ☐ This report includes both budget and actual figures.
- ☐ Our reserve accounts are invested in safe, short-term investments.
- ☐ We make a projection of our future costs and revenues.
- ☐ We have a 5-year (or longer) capital improvements plan.

## Operating Ratio:

If you check the **operating ratio** every month and compare it to past values, it will show the *trend* of your utility finances. The trend should be steady or upward. If the operating ratio is over the minimum value required to pay all the bills and it is holding steady, your utility is probably financially healthy. If the ratio is below the minimum value or falling, you need to do something to get it back in shape. Think of the operating ratio as the pulse of the utility.

To calculate your operating ratio, divide total revenues by the total operating expenses. Year-to-date financial data is used in the calculations. Year-to-date financial data is the total of the most recent 12 months of financial data. For example, to calculate the operating ratio as of June 30, 2000, you would use the financial data from July 1, 1999 through June 30, 2000.

Our **Total Revenues** year-to-date are \$           .

(Includes user charge fees, penalty payments, impact fees, hookup fees, tax assessments, interest income and any other revenue.)

Our **Total Operating Expenses** year-to-date are \$           .

(Includes administration, wages, benefits, taxes, insurance, utilities, chemicals, supplies, professional services, reserve account deposits, existing principal and interest payments and any other expenses.)

Our **Operating Ratio** =  $\frac{\text{Total Revenue}}{\text{Total Operating Expenses}}$  =

(The bare minimum operating ratio for a self-sustaining system is 1.00. If yours is less, you need to take steps to balance your expenses and revenues immediately! The operating ratio for most systems should exceed 1.15; small systems may need an operating ratio of 1.50.)



We check our operating ratio monthly and compare it to past values.

## Coverage Ratio:

The **Coverage Ratio** measures whether your utility has enough revenue to pay the principal and interest on its loans or bonds. Calculate the **Coverage Ratio** if your system has debt service.

Our annual **Debt Service Expenses** (principal & interest) = \$           .

Our **Non-Debt Expenses** (Total Operating Expenses - Debt Service Expenses) = \$ 0.

Our **Revenue Available for Debt Service** (Total Revenue - Non-Debt Expenses) = \$ 0

Our **Coverage Ratio** =  $\frac{\text{Revenue Available for Debt Service}}{\text{Debt Service Expenses}}$  =



We check our coverage ratio at least quarterly and compare it to past values.

- ☐ Our coverage ratio meets the requirements of our outstanding bonds and loans.  
(Usually the terms of a bond or loan require a coverage ratio of 1.25 or higher.)

### User Charge:

Having an adequate user charge in place is essential for operating and maintaining your wastewater utility.

- ☐ We have a user charge ordinance in place.
- ☐ We review our user charge rates at least once every two years and adjust rates as needed.
- ☐ Our rate structure is fair and equitable.
- ☐ The operation and maintenance costs of our system are charged to customers on a “proportional to use” basis (required for EPA grant and SRF loan recipients).
- ☐ We have surcharges for high-strength or high-volume wastewater flows released into the sewage system (if there are such discharges).
- ☐ We keep our customers well informed of the rate structure.

The number of customers connected to our system, including those we do not charge = .

The number of customers who regularly pay their bills every month = .

Our **collection rate** =  $\frac{\text{\# of customer accounts collected}}{\text{total number of customer accounts}} \times 100 = \underline{\hspace{2cm}} \%$ .

(If the collection rate is less than 95%, you should take steps to improve collections.)

### Average Treatment Costs:

Our **average cost** to treat 1000 gallons of wastewater =

$\frac{\text{Total Operating Expenses per year } 0.00}{(\text{Average Daily Flow gal/day } \underline{\hspace{2cm}}) \times (365 \text{ days/yr.})} \times 1000 \text{ gallons} = \$\underline{\hspace{2cm}} \text{ per 1000 gal.}$

- ☐ We calculate our average treatment costs/1000 gallons each year and compare this figure to past values.
- ☐ Our treatment costs/1000 gallons have remained stable or risen at a manageable rate over the past year.

## RESOURCES

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### ***I. TECHNICAL ASSISTANCE***

#### **Department of Natural Resources, Environmental Assistance Office (EAO)**

1-800-316-4827 or (573) 526-6627

<http://www.dnr.state.mo.us/oac/lgov.htm>

- |                                    |   |
|------------------------------------|---|
| √ Show-Me Ratemaker software       | √ Treatment systems troubleshooting               |
| √ User charge analysis assistance  | √ Operator certification and training information |
| √ Model sewer use ordinance        | √ Sludge management information                   |
| √ Project financing information    | √ Lagoon closure guidance                         |
| √ Assistance and information links | √ Environmental Management Institute for local    |
| √ Risk management plans            | government officials                              |

#### **Department of Natural Resources, Energy Center**

(573) 751-4000

<http://www.dnr.state.mo.us/energy/homeec.htm>

- √ Energy efficiency assistance for electric motors, buildings, operations and processes
- √ Grants and loans for energy efficiency projects

#### **Department of Natural Resources, Regional Offices and Environmental Programs**

1-800-361-4827 (call EAO for referral)

<http://www.dnr.state.mo.us/oac>

- |                          |  |
|--------------------------|--|
| √ Permitting information | √ State Revolving Fund projects coordination |
| √ Enforcement questions  | √ Pretreatment program questions             |
| √ Technical assistance   |  |

#### **Midwest Assistance Program**

1-800-822-2981

<http://www.map-inc.org>

- |                          |  |
|--------------------------|--|
| √ Technical assistance   | √ Environmental system troubleshooting |
| √ Environmental training |  |

#### **Missouri Rural Water Association**

(573) 474-6990

<http://www.moruralwater.org>

- |                          |  |
|--------------------------|--|
| √ Technical assistance   | √ Environmental system troubleshooting |
| √ Environmental training | √ Smoke testing                        |

### **Regional Planning Commissions**

Call EAO for phone number of commission that serves your area.

1-800-361-4827

√ Grant applications

√ Grant administration

√ Project planning

√ Community planning

√ Training

### **II. TECHNICAL RESOURCES**

Product catalogues, on-line discussion groups, conferences, training, and environmental news.

#### **National Small Flows Clearing House (NSFC)**

#### **National Environmental Training Center for Small Communities (NETCSC)**

P.O. Box 6064

West Virginia University

Morgantown, WV 26506-6064

(800) 624-8301 or (304) 293-4149

Fax: (304) 293-3161

<http://www.nsfc.wvu.edu>

<http://www.netc.wvu.edu>

#### **Water Environment Federation (WEF)**

601 Wythe Street

Alexandria, VA 22314-1994

(800) 666-0206 or (703) 684-2452

Fax: (703) 684-2492

<http://www.wef.org>

#### **American Public Works Association (APWA)**

2345 Grand Boulevard

Suite 500

Kansas City, MO 64108-2641

(816) 472-6100

Fax: (816) 472-1610

<http://www.apwa.net>

#### **Association of Metropolitan Sewerage Agencies**

1000 Connecticut Avenue, NW, Suite 410

Washington D.C. 20036-5302

(202) 833-AMSA

Fax: (202) 833-4657

<http://amsa-cleanwater.org>

## Customizing the MWPP

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You can electronically customize the MWPP form to fit your needs and preferences.

When you open the electronic version of the form, it will be locked. This prevents changes to the form while it is being filled out. To make changes to the form, follow the steps listed below:

- Save the form under a new name. If something goes wrong with the form you are working on, you will have the original to fall back on.
- Open the Forms toolbar. To do this click on View, then click Toolbars, then click Forms
- Unlock the form by clicking the Padlock on the Forms Toolbar.
- Make the desired changes to the form.
- Lock the form by clicking on the Padlock on the Forms Toolbar.
- Save the form.

### **CAUTION:**

- 1. If you change the form, you may disturb calculations it will automatically make for you.**
- 2. Every time you lock and then unlock the form, it will clear all data you entered in the form fields.** If you start entering data and then discover that you must unlock the form, first print out the entire form. You will then have the data in print for easy re-entry later.

## Additional Facilities

### MISSOURI MUNICIPAL WATER POLLUTION PREVENTION SURVEY

#### SYSTEM IDENTIFICATION

Today's Date: 12/13/02

City, District or Company Name	Evaluation Period (month/year to month/year)
<input type="text"/>	<input type="text"/> To <input type="text"/>
Mailing Address	Phone Number
<input type="text"/>	( <input type="text"/> ) <input type="text"/>
Contact Person	Title
<input type="text"/>	<input type="text"/>
Mailing Address (if different)	Phone Number (if different)
<input type="text"/>	( <input type="text"/> ) <input type="text"/>
1 <sup>st</sup> Wastewater Treatment Facility Name	Permit Number
<input type="text"/>	MO- <input type="text"/>
<input type="checkbox"/> 2 <sup>nd</sup> Wastewater Treatment Facility Name	Permit Number
<input type="text"/>	MO- <input type="text"/>
<input type="checkbox"/> 3 <sup>rd</sup> Wastewater Treatment Facility Name	Permit Number
<input type="text"/>	MO- <input type="text"/>
<input type="checkbox"/> 4 <sup>th</sup> Wastewater Treatment Facility Name	Permit Number
<input type="text"/>	MO- <input type="text"/>

# WASTEWATER UTILITY SYSTEMS

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## **I. WASTEWATER TREATMENT PROCESSES**

Check the boxes of the wastewater treatment processes that make up your wastewater treatment system:

### **Preliminary Treatment Systems:**

☐ Bar Screen      ☐ Grit Channel      ☐ Comminutor      ☐ Other

### **Primary Treatment Systems:**

☐ Primary Clarifier      ☐ Other

### **Secondary Treatment Systems:**

#### **Lagoon:**

☐ Number of Cells ☐ Mechanical Aeration

#### **Fixed Film:**

☐ Trickling Filter      ☐ Rotating Biological Contact      ☐ Sand Filter

#### **Activated Sludge:**

☐ Package Plant      ☐ Contact Stabilization      ☐ Oxidation Ditch

☐ Sequential Batch Reactor      ☐ Extended Aeration      ☐ Other

### **Advanced or Tertiary Treatment Systems:**

☐ Description

### **Disinfection Systems:**

☐ Chlorine      ☐ Ultraviolet      ☐ Ozone      ☐ Other

### **Effluent - Stream Discharge:**

☐ Continuous Discharge      ☐ Controlled Discharge      ☐ No-discharge

### **Effluent - Land Application:**

☐ Overland Flow      ☐ Irrigation System      ☐ Wetlands

## **II. SLUDGE TREATMENT SYSTEMS**

Check the boxes of the components that make up your sludge treatment system.

### **Sludge treatment:**

- ☐ Wastewater Lagoon      ☐ Anaerobic Digester      ☐ Aerobic Digester  
☐ Lime Stabilization      ☐ Composting      ☐ Air or Heat Drying  
☐ Storage Tank      ☐ Other

### **Sludge Storage Facilities:**

- ☐ Holding Tank      ☐ Basin      ☐ Concrete Pad      ☐ Building  
☐ Other

## **III. WASTEWATER SYSTEM DESIGN LIFE/CONDITION**

The original construction was completed on .

Upgrades/expansions to the system were completed on .

The system was designed to last  years.

We believe the remaining useful life of our system is  years.

- ☐ We anticipate that upgrades to the system will be needed to meet new federal or state discharge limitations.

The general condition of our wastewater treatment system is:

- ☐ Excellent      ☐ Good      ☐ Fair      ☐ Poor

### Treatment Systems Operations Checklist:

- ☐ The operation and maintenance manual is available on site.
- ☐ We have adequate laboratory equipment for process control.
- ☐ We have adequate laboratory equipment for regulatory testing or we contract for this service.
- ☐ We have a safety program, procedures and equipment in place.
- ☐ We have a preventive/predictive maintenance program in place.
- ☐ We have spare parts and equipment available for emergencies.
- ☐ We keep accurate operations and maintenance records.
- ☐ *Facilities that store large quantities of chlorine, ammonia, anhydrous sulfur dioxide, or methane:*
  - ☐ We have notified the Local Emergency Planning Commission (LEPC) and Missouri Emergency Response Commission (MERC) by filing MERC Tier II forms with each agency.
- ☐ *Facilities that store more than threshold quantities of these chemicals:*
  - ☐ We have a Risk Management Plan in place.

## LOADING / CAPACITY

If the organic or hydraulic loading of this facility consistently exceeds ninety percent of it's design capacity, you may have trouble meeting discharge limits. This section looks at loading, capacity, effluent quality and the effects of future growth on this facility.

**Table 1**

<b>HYDRAULIC LOADING</b> <b>Flow Measured On:</b> <input type="checkbox"/> Influent <input type="checkbox"/> Effluent <input type="checkbox"/> Flow not measured				<b>ORGANIC LOADING</b> <b>(Influent)</b>	
1	2	3	4	5	6
Month	No. of Bypasses during Month	Highest Peak Reading on Flowmeter (MGD)	Average Daily Flow (MGD)	Average BOD (mg/L)	Average Daily Organic Loading (col.4 x col. 5 x 8.34) = lb./day
Jan	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Feb	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Mar*	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Apr	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
May	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Jun*	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Jul	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Aug	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Sep*	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Oct	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Nov	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Dec*	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0

\* Lagoons – if you only test quarterly, input quarterly #s at Mar, June, Sep, and Dec.

### Definitions:

**Bypass** - any release or discharge from the plant that is untreated or only partially treated.

**Highest Peak Flow** - the highest day-long flow recorded in each month.

**Average Daily Flow** - the average of all daily flows for each month.

**Average Biochemical Oxygen Demand (BOD)** - the average of all influent samples for each month (concentrations, not mass or flow weighted).

## **I. FACILITY DESIGN CAPACITIES**

*(This section uses the information found in Table 1 on the previous page. Design information can be found in your O&M Manual or in the design specifications.)*

The design average hydraulic capacity of our system is [REDACTED] MGD.

Ninety percent of the design hydraulic capacity is 0.00 MGD.

The average daily flow (Table 1 col. 4) exceeded 90 percent of the design hydraulic capacity [REDACTED] times last year.

The peak hydraulic capacity of our system is [REDACTED] MGD.

The highest peak flow (Table 1 col. 3) exceeded the peak hydraulic capacity of our system [REDACTED] times last year.

The design average organic capacity of our system is [REDACTED] BOD lbs./day.

Ninety percent of the design average organic capacity is 0 BOD lbs./day.

The average daily organic loading (Table 1 col. 6) exceeded 90 percent of the design average organic capacity [REDACTED] times last year.

There were [REDACTED] bypasses (Table 1 col. 2) due to storm water last year.

There were [REDACTED] bypasses (column 2) due to equipment failure last year.



Our treatment facility has significant seasonal fluctuations in loading due to population or water use variations (e.g., students, tourism, institutional populations, industrial water use variations, migrant workers, part-year residents).

Table 2

<i>EFFLUENT QUALITY</i>		
Month	BOD (mg/L) Monthly Average	NFR (TSS) (mg/L) Monthly Average
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
Permit Limits		
No. of Times Over Limit		

Table 3

<i>OTHER PERMITTED CONSTITUENTS</i>					
Constituent		No. of Times Permit Limit was Exceeded	Constituent		No. of Times Permit Limit was Exceeded
<input type="checkbox"/>	Fecal Coliform		<input type="checkbox"/>	Ammonia	
<input type="checkbox"/>	Chlorine		<input type="checkbox"/>	pH	
<input type="checkbox"/>	Metals		<input type="checkbox"/>	Organics	
<input type="checkbox"/>	Whole Effluent Toxicity		<input type="checkbox"/>	Other	

## **II. GROWTH AND EXPANSION**

Check those boxes that apply to your facility.

The design population equivalent for our system is .

The current population equivalent served by our system is estimated to be .

Over the next 5 years, we anticipate that our community's population will:

- ☐ Grow significantly.
- ☐ Remain about the same.
- ☐ Decline significantly.

Over the next 5 years, we anticipate that our community will:

- ☐ Extend sewer service to previously unsewered areas of the community.
- ☐ See significant new residential development.
- ☐ See significant new commercial development.
- ☐ See a significant decrease in commercial facilities.
- ☐ See significant new industrial development.
- ☐ See a significant decrease in industrial operations.

We believe that these changes will:

- ☐ Not require any operational or physical changes to the treatment facility.
- ☐ Require operational changes at the treatment facility.
- ☐ Require a treatment facility upgrade.
- ☐ Require a treatment facility expansion.